

What is Claimed is:

1 1. A device for measuring a property of a surface comprising:
2 a housing with a passage defined therein;
3 a plurality of detection units disposed within said passage to detect traversal of said
4 passage by an object directed therethrough; and
5 a control unit disposed on said housing and coupled to said detection units to
6 determine a change in a rate of traversal of said object through said passage due to said
7 surface, wherein said control unit includes:
8 a processor to determine said change in said traversal rate in accordance with
9 detections from said detection units and to produce a resultant measurement value indicative
10 of said surface property and in relation to a predetermined scale; and
11 a display to display said resultant measurement value.

1 2. The device of claim 1, wherein said passage includes first and second walls in
2 facing relation and spaced apart from each other, and wherein each said detection unit
3 includes:
4 an emitter disposed in said first wall to transmit an energy signal toward said second
5 wall; and
6 a detector disposed within said second wall substantially coincident said emitter to
7 detect said energy signal.

1 3. The device of claim 2, wherein said energy signal is in the form of an infrared
2 signal.

1 4. The device of claim 1, wherein said display includes at least one of an LED
2 display and an LCD display.

1 5. The device of claim 1, further including:
2 a guide to direct said object into said passage at a desired velocity.

1 6. The device of claim 5, wherein said guide includes:
2 a track member to receive and direct said object into said passage; and
3 a stand to elevate a portion of said track member relative to said surface to enable said
4 object to traverse said track member and attain said desired velocity.

1 7. The device of claim 1, wherein said surface includes a golf green and said
2 scale corresponds to speed values for said golf green.

1 8. The device of claim 1, wherein said housing further includes a level unit to
2 indicate a slope of said surface.

1 9. The device of claim 1, wherein said control unit includes a power source and
2 said display includes a power indicator to indicate a power level of said power source.

1 10. The device of claim 1, wherein said display includes at least one of a decimal
2 point and a detector indicator to indicate detection of said object within said passage by said
3 detection units.

1 11. The device of claim 1, wherein said control unit includes a plurality of detector
2 indicators to indicate detection of said object within said passage by said detection units.

1 12. The device of claim 1, wherein said passage includes a first pair of detection
2 units disposed toward a first end of said passage and separated by a first predetermined
3 distance and a second pair of detection units disposed toward an opposing end of said passage
4 and separated by a second predetermined distance.

1 13. The device of claim 12, wherein said processor includes:
2 a first interval module to measure elapsed time for said object to travel between said
3 first pair of detection units; and
4 a second interval module to measure elapsed time for said object to travel between
5 said second pair of detection units.

1 14. The device of claim 13, wherein said processor further includes:
2 an index module to determine an index value corresponding to a ratio of said elapsed
3 times measured by said first and second interval modules; and
4 a retrieval module to retrieve a corresponding value from a storage unit based on said
5 index value, wherein said retrieved value serves as said resultant measurement value.

1 15. The device of claim 14, wherein said values stored within said storage unit
2 correspond to surface property values determined in accordance with prior surface
3 measurements.

1 16. The device of claim 1, wherein said object includes a golf ball.

1 17. A method of measuring a property of a surface comprising:

- 2 (a) receiving an object within a passage defined in a housing, wherein a plurality
3 of detection units are disposed within said passage;
4 (b) detecting traversal of said passage by said object directed therethrough via said
5 plurality of detection units;
6 (c) determining a change in a rate of traversal of said object through said passage
7 due to said surface in accordance with detections from said detection units;
8 (d) producing a resultant measurement value indicative of said surface property
9 and in relation to a predetermined scale based on said determined rate change; and
10 (e) displaying said resultant measurement value on a display.

1 18. The method of claim 17, wherein said passage includes first and second walls
2 in facing relation and spaced apart from each other, and step (b) further includes:

- 3 (b.1) each said detection unit transmitting an energy signal from said first wall
4 toward said second wall via an emitter disposed in said first wall and detecting said
5 transmitted energy signal via a detector disposed within said second wall substantially
6 coincident said emitter.

1 19. The method of claim 18, wherein said energy signal is in the form of an
2 infrared signal.

1 20. The method of claim 17, wherein step (e) further includes:
2 (e.1) displaying said resultant measurement value on at least one of an LED display
3 and an LCD display.

1 21. The method of claim 17, wherein step (a) further includes:
2 (a.1) directing said object into said passage at a desired velocity via a guide.

1 22. The method of claim 21, wherein said guide includes a track member to
2 receive and direct said object, and step (a.1) further includes:
3 (a.1.1) elevating a portion of said track member relative to said surface to enable said
4 object to traverse said track member and attain said desired velocity.

1 23. The method of claim 17, wherein said surface includes a golf green and said
2 scale corresponds to speed values for said golf green.

1 24. The method of claim 17, wherein step (a) further includes:
2 (a.1) measuring and indicating a slope of said surface.

1 25. The method of claim 17, wherein said housing includes a power source, and
2 wherein step (e) further includes:
3 (e.1) displaying a power indicator to indicate a power level of said power source.

1 26. The method of claim 17, wherein step (b) further includes:
2 (b.1) enabling at least one detector indicator to indicate detection of said object within
3 said passage by said detection units.

1 27. The method of claim 17, wherein said passage includes a first pair of detection
2 units disposed toward a first end of said passage and separated by a first predetermined

3 distance and a second pair of detection units disposed toward an opposing end of said passage
4 and separated by a second predetermined distance, and step (c) further includes:

5 (c.1) measuring elapsed time for said object to travel between said first pair of
6 detection units; and

7 (c.2) measuring elapsed time for said object to travel between said second pair of
8 detection units.

1 28. The method of claim 27, wherein step (d) further includes:

2 (d.1) determining an index value corresponding to a ratio of said measured elapsed
3 times; and

4 (d.2) retrieving a corresponding value from a storage unit based on said index value,
5 wherein said retrieved value serves as said resultant measurement value.

1 29. The method of claim 28, wherein said values stored within said storage unit
2 correspond to surface property values determined in accordance with prior surface
3 measurements.

1 30. The method of claim 1, wherein said object includes a golf ball.